AUTHOR INDEX

A

Acker, S. *See* Rutherford and Acker.

Ackers, G. K., and Smith, F. R. Resolving pathways of functional coupling within protein assemblies by site-specific structural perturbation. 49:155

Adolph, K. W., Kreisman, L. R., and Kuehn, R. L. Assembly of chromatin fibers into metaphase chromosomes analyzed by transmission electron microscopy and scanning electron microscopy. 49:221

Affolter, H., and Coronado, R. Sidedness of reconstituted calcium channels from muscle transverse tubules as determined by D600 and D890 blockade. 49:767

Allewell, N. M. *See* Burz and Allewell.

Allison, S. A., Northrup, S. H., and McCammon, J. A. Simulation of biomolecular diffusion and complex formation. 49:167

Ambrose, C. *See* Bina, Blasquez, and Ambrose.

Andersen, O. S. *See* Barrett-Russell, Weiss, Navetta, Koeppe, and Andersen.

—, *See* Durkin, Andersen, Blout, Heitz, Koeppe, and Trudelle.

Anderson, G. P. *See* Draheim, Anderson, Duane, and Gross.

Arnott, S., Chandrasekaran, R., Millane, R., and Park, H.-S. RNA-RNA, DNA-DNA, and DNA-RNA polymorphism. 49:3

Arrigo, P. *See* Takashima, Casaleggio, Giuliano, Morando, Arrigo, and Ridella.

Athey, B. D. *See* Williams, Athey, Muglia, Schappe, Gough, and Langmore.

Ausio, J. *See* Greulich, Ausio, Seger, Wachtel, and Eisenberg.

B

Babu, A. *See* Gulati and Babu.

Baldwin, E. T., Crumley, K. V., and Carter, C. W., Jr. Practical, rapid screening of protein crystallization conditions by dynamic light scattering. 49:47

Barisas, B. G. *See* Goins, Masserini, Barisas, and Freire.

Barnett, V. A., Fajer, P., Polnaszek, C. F., and Thomas, D. D. High-resolution detection of muscle crossbridge orientation by electron paramagnetic resonance. 49:144

Barrett-Russell, E. W., Weiss, L. B., Navetta, F. I., Koeppe, R. E., II, and Andersen, O. S. Single-channel studies on linear gramicidins with altered amino acid sidechains. Effects of altering the polarity of the side chain at position 1 in gramicidin A. 49:673

Baskin, R. J., Burton, K., Chen, J. S., and Yeh, Y. Optical ellipsometry measurements on the diffraction patterns from single fibers. 49:43

Bates, R. H. T. *See* Millane, Bates, Fright, and Norton.

Bayley, P. M. *See* Manser and Bayley.

Bazinet, C. *See* Hartwieg, Bazinet, and King.

Beese, L., Feder, R., and Sayre, D. Contact x-ray microscopy: a new technique for imaging cellular fine structure. 49:259

Begenisich, T. *See* Bennett, McKinney, Begenisich, and Kass.

—, *See* Danko, Smith-Maxwell, McKinney, and Begenisich.

Bell, G. I. *See* Torney, Dembo, and Bell.

Bemski, G. *See* Wajnberg, Kalinowski, Bemski, and Helman.

Bennett, P., McKinney, L., Begenisich, T., and Kass, R. S. Adrenergic modulation of the delayed rectifier potassium channel in calf cardiac Purkinje fibers. 49:839

Berg, S. P. *See* Ivey, Kalevik, and Berg.

Berger, R. L. *See* Hoy, Cook, Berger, and Freidman.

Berthet-Colominas, C., Boulanger, P., Devaux, C., Jacrot, B., and Timmins, P. A. Structural studies of adenovirus type 2 and an assembly mutant. 49:21

Betzig, E., Lewis, A., Harootunian, A., Isaacson, M., and Kratschmer, E. Near field scanning optical microscopy (NSOM): development and biophysical applications. 49:269

Beyar, R., and Sideman, S. Source parameters of the left ventricle related to the physiological characteristics of the cardiac muscle. 49:1185

Bina, M., Blasquez, V., and Ambrose, C. Simian virus 40 assembly, studied by temperature-induced conformational changes in capsid protein VP1. 49:38

Bitbol, M. Red blood cell orientation in orbit $C = 0$. 49:1055

Bjerknes, M. A test of the stochastic theory of stem cell differentiation. 49:1223

Blasie, J. K., Pascolini, D., Herbette, L., Pierce, D., Itshak, F., Skita, V., and Scarpa, A. Time-resolved structural studies of the sarcoplasmic reticulum membrane. 49:110

Blasquez, V. *See* Bina, Blasquez, and Ambrose.

Blatz, A. L., and Magleby, K. L. Correcting single channel data for missed events. 49:967

Blout, E. R. *See* Durkin, Andersen, Blout, Heitz, Koeppe, and Trudelle.

Blum, A. Simple charge-medium interaction models of amphiphilic proteins with unknown tertiary structure. 49:85

Blumenthal, R. *See* Levin, Vincent, Blumenthal, and Steer.

Bogomolni, R. A. *See* Spudich, McCain, Nakanishi, Okabe, Shimizu, Rodman, Honig, and Bogomolni.

Boni, L. T., Connolly, A. J., and Kleinfeld, A. M. Transmembrane distribution of gramicidin by tryptophan energy transfer. 49:122

Borochnov, N. *See* Reisler, Cheung, and Borochnov.

Boublik, M. *See* Frank, Verschoor, Wegenknecht, Rosenthal, Radermacher, and Boublik.

Boulanger, P. *See* Berthet-Colominas, Boulanger, Devaux, Jacrot, and Timmins.

Boylan, D., and Phillips, G. N., Jr. Motions of tropomyosin: characterization of anisotropic motions and coupled displacements in crystals. 49:76

Bramhall, J. S. *See* Pringle and Bramhall.

Brayer, G. D. *See* McPherson, Brayer, and Morrison.

Brehm, L. P. *See* Sharnoff, Brehm, and Henry.

Brenner, B. *See* Yu and Brenner.

Brodsky, B., and Eikenberry, E. F. Determinants of collagen fibril structure. 49:78

Brooks, D. *See* McDaniel, Sharp, Brooks, McLaughlin, Winiski, Cafiso, and McLaughlin.

Brown, A. M. *See* Caffrey, Josephson, and Brown.

Bruccoleri, R., Novotny, J., Keck, P., and Cohen, C. Two-stranded α-helical coiled-coils of fibrous proteins: theoretical analysis of supercoil formation. 49:79

Brunzel, U., Dreybrodt, W., and Schweitzer-Stenner, R. pH-dependent absorption in the *B* and *Q* bands of oxyhemoglobin and chemically modified oxyhemoglobin (BME) at low Cl^- concentrations. 49:1069

Bunow, B. *See* Reddy, Hendler, and Bunow.

Burnett, R. M., van Oostrum, J., and Roberts, M. M. Progress in understanding adenovirus architecture. 49:22

Burtnick, L. D. Differential behavior of heavy meromyosin and heavy meromyosin subfragment one toward a monomeric actin derivative. 49:138

Burton, K. *See* Baskin, Burton, Chen, and Yeh.

Burz, D. S., and Allewell, N. M. Mapping structural perturbations in *Escherichia coli* aspartate transcarbamylase by medium resolution hydrogen exchange. 49:70

C

Caffrey, J. M., Josephson, I. R., and Brown, A. M. Calcium channels of amphibian stomach and mammalian aorta smooth muscle cells. 49:1237
Cafiso, D. S. *See* Xu and Cafiso.
—, *See* McDaniel, Sharp, Brooks, McLaughlin, Winiski, Cafiso, and McLaughlin.
Capel, M. *See* Moore, Capel, Kjeldgaard, and Engelman.
Carter, C. W., Jr. *See* Baldwin, Crumley, and Carter.
Carvalho-Alves, P. C. *See* Verjovski-Almeida, Carvalho-Alves, Oliveira, and Ferreira.
Casaleggio, A. *See* Takashima, Casaleggio, Giuliano, Morando, Arrigo, and Ridella.
Caughey, W. S. *See* Hendler, Reddy, Shrager, and Caughey.
Cecchi, G., Griffiths, P. J., and Taylor, S. Stiffness and force in activated frog skeletal muscle fibers. 49:437
Chandler, R. E. *See* Goldman and Chandler.
Chandrasekaran, R. *See* Arnott, Chandrasekaran, Millane, and Park.
Chang, C.-H., Jonas, R., Melchiore, S., Govindjee, R., and Ebrey, T. G. Mechanism and role of divalent cation binding of bacteriorhodopsin. 49:731
Chen, J. S. *See* Baskin, Burton, Chen, and Yeh.
Chen, S.-H. *See* Wang and Chen.
Chester, D. W. *See* Herbette, Chester, and Rhodes.
Cheung, P. *See* Reisler, Cheung, and Borochnov.
Cheung, S. *See* Donlan, Cheung, and Lu.
Chiu, W. *See* Grant, Schmid, Chiu, Deatherage, and Hosoda.
Chung, S.-Y. *See* Wooley, Chung, Wall, and LeStourgeon.
Church, S. E., Griffiths, D. J., Lewis, R. N. A. H., McElhaney, R. N., and Wickman, H. H. X-ray structure study of thermotropic phases in isoacylphosphatidylcholine multibilayers. 49:597
Clark, J. H. *See* Glazer and Clark.
Clay, J. R. Conditioning hyperpolarization delays in squid axon potassium channels. 49:957
Cohen, C. *See* Bruccoleri, Novotny, Keck, and Cohen.
—, *See* Vibert, Szentkiralyi, Hardwicke, Szent-Györgyi, and Cohen.
Colnago, L. A. *See* Valentine, Schneider, Leo, Colnago, and Opella.
Conjeaud, H., and Mathis, P. Electron transfer in the photosynthetic membrane. Influence of pH and surface potential on the P-680 reduction kinetics. 49:1215
Connolly, A. J. *See* Boni, Connolly, and Kleinfeld.
Cook, D. C. *See* Hoy, Cook, Berger, and Freidman.
Cordova, L. *See* Taylor, Reedy, Cordova, and Reedy.
Cornell, B. A. *See* Smith and Cornell.
Coronado, R. *See* Affolter and Coronado.
Crawford, G. E., and Earnshaw, J. C. Phase transitions in monoglyceride bilayers. A light scattering study. 49:869
Cross, T. A. A solid state nuclear magnetic resonance approach for determining the structure of gramicidin A without model fitting. 49:124
Crumley, K. V. *See* Baldwin, Crumley, and Carter.

D

Dani, J. A. Ion-channel entrances influence permeation. Net charge, size, shape, and binding considerations. 49:607
Danko, M., Smith-Maxwell, C., McKinney, L., and Begenisich, T. Block of sodium channels by internal mono- and divalent guanidium analogues. Modulation by sodium ion concentration. 49:509
Deatherage, J. F. *See* Grant, Schmid, Chiu, Deatherage, and Hosoda.
Dembo, M. *See* Torney, Dembo, and Bell.
Devaux, C. *See* Berthet-Colominas, Boulanger, Devaux, Jacrot, and Timmins.
Donath, E., and Voigt, A. Electrophoretic mobility of human erythrocytes. On the applicability of the charged layer model. 49:493
Donlan, M., Cheung, S., and Lu, P. NMR studies of an SV40 enhancer core DNA sequence. 49:26
Dorset, D. L. Quantitative electron microscopic analysis of microcrystalline protein arrays: a few precautionary notes. 49:50
Draheim, J. E., Anderson, G. P., Duane, J. W., and Gross, E. L. Plastocyanin conformation. An analysis of its near ultraviolet absorptionand circular dichroic spectra. 49:891
Dreybrodt, W. *See* Brunzel, Dreybrodt, and Schweitzer-Stenner.
—, *See* Schweitzer-Stenner, Wedekind, and Dreybrodt.
Duane, J. W. *See* Draheim, Anderson, Duane, and Gross.
Durkin, J. T., Andersen, O. S., Blout, E. R., Heitz, F., Koeppe, R. E., II, and Trudelle, Y. Structural information from functional measurements: single-channel studies on gramicidin analogues. 49:118

E

Earnshaw, J. C. *See* Crawford and Earnshaw.
Ebrey, T. G. *See* Chang, Jonas, Melchiore, Govindjee, and Ebrey.
Egelman, E. *See* Stasiak and Egelman.
Eikenberry, E. F. *See* Brodsky and Eikenberry.
Eisenberg, H. *See* Greulich, Ausio, Seger, Wachtel, and Eisenberg.
Eisinger, J., Flores, J., and Petersen, W. P. A milling crowd model for local and long-range obstructed lateral diffusion. Mobility of excimeric probes in the membrane of intact erythrocytes. 49:987
Elgsaeter, A. *See* Stokke, Mikkelsen, and Elgsaeter.
Engelman, D. M. *See* Moore, Capel, Kjeldgaard, and Engelman.
Erbe, E. F. *See* Takahashi, Noji, Erbe, Steere, and Kon.

F

Fajer, P. *See* Barnett, Fajer, Polnaszek, and Thomas.
Farber, D. *See* Loscalzo, Slayter, Handin, and Farber.
Feder, R. *See* Beese, Feder, and Sayre.
Federspiel, W. J. A model study of intracellular oxygen gradients in a myoglobin-containingskeletal muscle fiber. 49:857
Ferreira, S. T. *See* Verjovski-Almeida, Carvalho-Alves, Oliveira, and Ferreira.
Ferrier, J., and Lucas, W. J. Ion transport and the vibrating probe. 49:803
Finzel, B. C., and Salemme, F. R. Anomalous temperature factor behavior and crystal lattice mobility in cytochrome *c*. 49:73
Fischman, D. A. *See* Saad, Fischman, and Pardee.
Flewelling, R. F., and Hubbell, W. L. Hydrophobic ion interactions with membranes. Thermodynamic analysis of tetraphenylphosphonium binding to vesicles. 49:531
—, The membrane dipole potential in a total membrane model. Applications to hydrophobic ion interactions with membranes. 49:541
Flores, J. *See* Eisinger, Flores, and Petersen.
Frank, J., Verschoor, A., Wegenknecht, T., Rosenthal, M., Radermacher, M., and Boublik, M. New strategies for determining ribosomal subunit structure from electron micrographs by single particle averaging methods. 49:9
Frank, J. *See* Mannella, Ribeiro, and Frank.

Franz, M. A. *See* Polland, Franz, Zinth, Kaiser, Kolling, and Oesterhelt.
Freidman, F. K. *See* Hoy, Cook, Berger, and Freidman.
Freire, E. *See* Goins, Masserini, Barisas, and Freire.
Frey, P. A. *See* Yang, Frey, Hainfeld, and Wall.
Fricsovszky, G. *See* Papp, Fricsovszky, and Meszéna.
Fright, W. R. *See* Millane, Bates, Fright, and Norton.
Fuhr, G., Glaser, R., and Hagedorn, R. Rotation of dielectrics in a rotating electric high-frequency field. Model experiments and theoretical explanation of the rotation effect of living cells. 49:395
Fukuda, J. *See* Kasai, Kameyama, Yamaguchi, and Fukuda.

G

Garavito, R. M. *See* Zulauf, Timmins, and Garavito.
Gergely, J. *See* Ishiwata, Manuck, Seidel, and Gergely.
—, *See* Tao, Gergely, and Leavis.
Gershon, N. D., Porter, K. R., and McNiven, M. A. Three dimensional structure of the cell center revealed by computer graphics methodology. 49:65
Getzoff, E. D., Tainer, J. A., and Olson, A. J. Recognition and interactions controlling the assemblies of beta-barrel domains. 49:191
Ghosh, S., Petrin, M., and Maki, A. Spin-lattice relaxation in the triplet state of the buried tryptophan residue of ribonuclease T1. 49:753
Giuliano, F. *See* Takashima, Casaleggio, Giuliano, Morando, Arrigo, and Ridella.
Glaser, R. *See* Fuhr, Glaser, and Hagedorn.
Glazer, A. N., and Clark, J. H. Phycobilisomes: macromolecular structure and energy flow dynamics. 49:115
Glitz, D. G., Olson, H. M., and Lasater, L. S. Synthetic oligodeoxynucleotides as probes of RNA conformation within the ribosome. 49:11
Goins, B., Masserini, M., Barisas, B. G., and Freire, E. Lateral diffusion of ganglioside G_{M1} in phospholipid bilayer membranes. 49:849
Goldman, L., and Chandler, R. E. Geographical distribution and inactivation kinetics in internally perfused *Myxicola* giant axons. 49:761
Goldman, Y. E. *See* Sundell, Goldman, and Peachey.
Gough, A. H. *See* Williams, Athey, Muglia, Schappe, Gough, and Langmore.
Govindjee, R. *See* Chang, Jonas, Melchiore, Govindjee, and Ebrey.
Grant, R. A., Schmid, M. F., Chiu, W., Deatherage, J. F., and Hosoda, J. Alignment and merging of electron microscope images of frozen hydrated crystals of the t4 DNA helix destabilizing protein GP32*I. 49:251
Greiss, G. A., Serwer, P., and Horowitz, P. M. Binding of ethidium to bacteriophages T7 and P22. 49:19
Greulich, K. O., Ausio, J., Seger, D., Wachtel, E., and Eisenberg, H. Chromatin folding into higher order structure. 49:7
Griffiths, D. J. *See* Church, Griffiths, Lewis, McElhaney, and Wickman.
Griffiths, P. J. *See* Cecchi, Griffiths, and Taylor.
Gross, D., and Webb, W. W. Molecular counting of low-density lipoprotein particles as individuals and small clusters on cell surfaces. 49:901
Gross, E. L. *See* Draheim, Anderson, Duane, and Gross.
Gulati, J., and Babu, A. Kinetics of force redevelopment in isolated intact frog fibers in solutions of varied osmolarity. 49:949
Gülen, D., Wittmershaus, B. P., and Knox, R. S. Theory of picosecond-laser-induced fluorescence from highly excited complexes with small numbers of chromophores. 49:469

H

Hagedorn, R. *See* Fuhr, Glaser, and Hagedorn.
Hainfeld, J. F. *See* Yang, Frey, Hainfeld, and Wall.
Handin, R. I. *See* Loscalzo, Slayter, Handin, and Farber.
Hardwicke, P. *See* Vibert, Szentkiralyi, Hardwicke, Szent-Györgyi, and Cohen.
Harootunian, A. *See* Betzig, Lewis, Harootunian, Isaacson, and Kratschmer.
Hartwieg, E.,Bazinet, C., and King, J. The DNA injection apparatus of phage P22. 49:24
Heggeness, S. T., and Starkus, J. G. Saxitoxin and tetrodotoxin. Electrostatic effects on gating current in crayfish axons. 49:629
Heitz, F. *See* Durkin, Andersen, Blout, Heitz, Koeppe, and Trudelle.
Helman, J. S. *See* Wajnberg, Kalinowski, Bemski, and Helman.
Hendler, R. W., Reddy, K. V. S., Shrager, R. I., and Caughey, W. S. Analysis of the spectra and redox properties of pure cytochromes aa_3. 49:717
—, *See* Reddy and Hendler.
—, *See* Reddy, Hendler, and Bunow.
—, *See* Shrager and Hendler.
Hendrickson, W. A., and Royer, W. E., Jr. Principles in the assembly of annelid erythrocruorins. 49:177
Henry, G. D., O'Neil, J. D. J., Weiner, J. H., and Sykes, B. D. Hydrogen exchange in the hydrophilic regions of detergent-solubilized M1 coat protein detected by carbon-13 nuclear magnetic resonance isotope shifts. 49:329
Henry, R. W. *See* Sharnoff, Brehm, and Henry.
Herbette, L. G., Chester, D. W., and Rhodes, D. G. Structural analysis of drug molecules in biological membranes. 49:91
—, *See* Rzepecki, Strittmatter, and Herbette.
—, *See* Blasie, Pascolini, Herbette, Pierce, Itshak, Skita, and Scarpa.
Hill, T. L. Effect of fluctuating surface structure and free energy on the growth of linear tubular aggregates. 49:1017
—, Theoretical study of a model for the ATP cap at the end of an actin filament. 49:981
Hirsch, R. E. *See* Zukin, Klos, and Hirsch.
Ho, C., Rule, G. S., and Pratt, E. A. Nuclear magnetic resonance, biochemical, and molecular genetic studies of the membrane-bound D-lactate dehydrogenase of *Escherichia coli*. 49:113
Honig, B. *See* Spudich, McCain, Nakanishi, Okabe, Shimizu, Rodman, Honig, and Bogomolni.
Horn, R. *See* Patlak, Oritz, and Horn.
Horowitz, P. M. *See* Greiss, Serwer, and Horowitz.
Hosoda, J. *See* Grant, Schmid, Chiu, Deatherage, and Hosoda.
Hoy, G. R., Cook, D. C., Berger, R. L., and Freidman, F. K. Mössbauer spectroscopic studies of hemoglobin and its isolated subunits. 49:1009
Huang, C., Mason, J. T., Stephenson, F. A., and Levin, I. W. Polymorphic phase behavior of platelet-activating factor. 49:587
Hubbell, W. L. *See* Flewelling and Hubbell.
—, *See* Flewelling and Hubbell.
—, *See* Tsui, Ojcius, and Hubbell.
Hui Bon Hoa, G. *See* Marden, Hui Bon Hoa, and Stetzkowski-Marden.

I

Imanishi, Y. *See* Kamegai, Kimura, and Imanishi.
Isaacson, M. *See* Betzig, Lewis, Harootunian, Isaacson, and Kratschmer.
Ishiwata, S., Manuck, B. A., Seidel, J. C., and Gergely, J. Saturation transfer electron paramagnetic resonance study of

the mobility of myosin heads in myofibrils under conditions of partial dissociation. 49:821
Itshak, F. *See* Blasie, Pascolini, Herbette, Pierce, Itshak, Skita, and Scarpa.
Ivey, S., Kalevik, M. C., and Berg, S. P. Use of polyclonal antibodies to determine which peptides of a transmembrane protein complex have aqueous exposures. 49:106

J

Jackson, M. B. Kinetics of unliganded acetylcholine receptor channel gating. 49:663
Jacrot, B. *See* Berthet-Colominas, Boulanger, Devaux, Jacrot, and Timmins.
Jeitler-Nilsson, A. *See* Weiss, Stearman, Jeitler-Nilsson, Karplus, and Sauer.
Johnson, D. C. *See* Petersen, Johnson, and Schlesinger.
Jonas, R. *See* Chang, Jonas, Melchiore, Govindjee, and Ebrey.
Josephson, I. R. *See* Caffrey, Josephson, and Brown.
Joshi, N. *See* Papp, Kracke, Joshi, and Martonosi.

K

Kaiser, W. *See* Polland, Franz, Zinth, Kaiser, Kolling, and Oesterhelt.
Kalevik, M. C. *See* Ivey, Kalevik, and Berg.
Kalinowski, H. J. *See* Wajnberg, Kalinowski, Bemski, and Helman.
Kamegai, J., Kimura, S., and Imanishi, Y. Conformation of sequential polypeptide poly(leu-leu-D-phe-pro) and formation of ion channel across bilayer lipid membrane. 49:1101
Kameyama, M. *See* Kasai, Kameyama, Yamaguchi, and Fukuda.
Karplus, M. *See* Weiss, Stearman, Jeitler-Nilsson, Karplus, and Sauer.
Kasai, H., Kameyama, M., Yamaguchi, K., and Fukuda, J. Single transient K channels in mammalian sensory neurons. 49:1243
Kass, R. S. *See* Bennett, McKinney, Begenisich, and Kass.
Keck, P. *See* Bruccoleri, Novotny, Keck, and Cohen.
Kensler, R. W., and Stewart, M. An ultrastructural study of cross-bridge arrangement in the frog thigh muscle thick filament. 49:343
Kensler, R. W. *See* Levine, Kensler, and Levitt.
Kimura, S. *See* Kamegai, Kimura, and Imanishi.
King, G. I., and White, S. H. Determining bilayer hydrocarbon thickness from neutron diffraction measurements using strip-function models. 49:1047
King, J. *See* Hartwieg, Bazinet, and King.
King, L., and Weber, G. Conformational drift of lactate dehydrogenase. 49:72
Kjeldgaard, M. *See* Moore, Capel, Kjeldgaard, and Engelman.
Klein, J. W. *See* Ware and Klein.
Kleinfeld, A. M. *See* Boni, Connolly, and Kleinfeld.
Klos, M. F. *See* Zukin, Klos, and Hirsch.
Knox, R. S. *See* Gülen, Wittmershaus, and Knox.
Koeppe, R. E., II. *See* Barrett-Russell, Weiss, Navetta, Koeppe, and Andersen.
—, *See* Durkin, Andersen, Blout, Heitz, Koeppe, and Trudelle.
Kolling, E. *See* Polland, Franz, Zinth, Kaiser, Kolling, and Oesterhelt.
Kon, H. *See* Takahashi, Noji, Erbe, Steere, and Kon.
Kracke, G. *See* Papp, Kracke, Joshi, and Martonosi.
Kratschmer, E. *See* Betzig, Lewis, Harootunian, Isaacson, and Kratschmer.
Kreisman, L. R. *See* Adolph, Kreisman, and Kuehn.
Krimm, S. *See* Naik and Krimm.
—, *See* Naik and Krimm.
Kuehn, R. L. *See* Adolph, Kreisman, and Kuehn.
Kunisawa, T. *See* Suzuki, Kunisawa, and Otsuka.
Kutchai, H. *See* Williams and Kutchai.
Kydon, D. W. *See* Peemoeller, Yeomans, Kydon, and Sharp.

L

Langmore, J. P. *See* Williams, Athey, Muglia, Schappe, Gough, and Langmore.
Lasater, L. S. *See* Glitz, Olson, and Lasater.
Layton, H. E. Distribution of Henle's loops may enhance urine concentrating capability. 49:1033
Leavis, P. *See* Tao, Gergely, and Leavis.
Lee, R. H. *See* Rose and Lee.
Leo, G. C. *See* Valentine, Schneider, Leo, Colnago, and Opella.
LeStourgeon, W. *See* Wooley, Chung, Wall, and LeStourgeon.
Levin, I. W., Vincent, J. S., Blumenthal, R., and Steer, C. J. Use of vibrational spectroscopy in defining the role of clathrin in coated vesicle formation. 49:111
—, *See* Huang, Mason, Stephenson, and Levin.
—, *See* O'Leary, Ross, Lieber, and Levin.
Levine, R. J. C., Kensler, R. W., and Levitt, P. Crossbridge and backbone structure of invertebrate thick filaments. 49:135
Levitt, P. *See* Levine, Kensler, and Levitt.
Lewis, A. *See* Betzig, Lewis, Harootunian, Isaacson, and Kratschmer.
Lewis, R. N. A. H. *See* Church, Griffiths, Lewis, McElhaney, and Wickman.
Lieber, M. R. *See* O'Leary, Ross, Lieber, and Levin.
Loscalzo, J., Slayter, H., Handin, R. I., and Farber, D. Subunit structure and assembly of Von Willebrand factor polymer: complementary analysis by electron microscopy and quasielastic light scattering. 49:49
Lu, P. *See* Donlan, Cheung, and Lu.
Lucas, W. J. *See* Ferrier and Lucas.

M

Magdoff-Fairchild, B., and Rosen, L. S. Plausible models of the sickle hemoglobin fiber based on x-ray diffraction data. 49:67
Magleby, K. L. *See* Blatz and Magleby.
Maki, A. *See* Ghosh, Petrin, and Maki.
Makowski, L. *See* Stubbs, Namba, and Makowski.
Mannella, C. A., Ribeiro, A., and Frank, J. Structure of the channels in the outer mitochondrial membrane: electron microscopic studies of the periodic arrays induced by phospholipase A_2 treatment of the neurospora membrane. 49:307
Manser, E. J., and Bayley, P. M. Conformational and assembly properties of nucleotide-depleted tubulin. 49:81
Mantsch, H. H. *See* Mushayakarara, Wong, and Mantsch.
Manuck, B. A. *See* Ishiwata, Manuck, Seidel, and Gergely.
Marden, M. C., Hui Bon Hoa, G., and Stetzkowski-Marden, F. Heme protein fluorescence versus pressure. 49:619
Markley, J. L. *See* Virudachalam and Markley.
Martonosi, A. *See* Papp, Kracke, Joshi, and Martonosi.
Marx, K. A., and Ruben, G. C. Hydrated macromolecular assembly structure revealed by freeze-etch stereo-electron microscopy: spermidine-DNA toruses and RNA polymerase-DNA complexes. 49:53
Mason, J. T. *See* Huang, Mason, Stephenson, and Levin.
Masserini, M. *See* Goins, Masserini, Barisas, and Freire.
Mathis, P. *See* Conjeaud and Mathis.
McCain, D. A. *See* Spudich, McCain, Nakanishi, Okabe, Shimizu, Rodman, Honig, and Bogomolni.
McCammon, J. A. *See* Allison, Northrup, and McCammon.
McDaniel, R. V., and McIntosh, T. J. X-ray diffraction studies of the cholera toxin receptor, G_{m1}. 49:94
—, Sharp, K., Brooks, D., McLaughlin, A. C., Winiski, A. P., Cafiso, D., and McLaughlin, S. Electrokinetic and electrostatic

properties of bilayers containing gangliosides G_{M1}, G_{D1a}, or G_{T1}. Comparison with nonlinear theory. 49:741
McElhaney, R. N. *See* Church, Griffiths, Lewis, McElhaney, and Wickman.
McIntosh, T. J. *See* McDaniel and McIntosh.
McKinney, L. *See* Bennett, McKinney, Begenisich, and Kass.
—, *See* Danko, Smith-Maxwell, McKinney, and Begenisich.
McLaughlin, A. C. *See* McDaniel, Sharp, Brooks, McLaughlin, Winiski, Cafiso, and McLaughlin.
McLaughlin, S. *See* McDaniel, Sharp, Brooks, McLaughlin, Winiski, Cafiso, and McLaughlin.
McNiven, M. A. *See* Gershon, Porter, and McNiven.
McPherson, A.,Brayer, G. D., and Morrison, R. Structure of the crystalline complex between ribonuclease A and $d(pA)_4$. 49:209
Medlock, K. *See* Wickstrom, Simonet, Medlock, and Ruiz-Robles.
Meichiore, S. *See* Chang, Jonas, Melchiore, Govindjee, and Ebrey.
Meszéna, G. *See* Papp, Fricsovszky, and Meszéna.
Miguel, A. G., and Tyrrell, R. M. Repair of near-ultraviolet (365 nm)-induced strand breaks in *Escherichia coli* DNA. The role of the polA and recA gene products. 49:485
Mikkelsen, A. *See* Stokke, Mikkelsen, and Elgsaeter.
Millane, R. P.,Bates, R. H. T., Fright, W. R., and Norton, W. A. Towards direct phase retrieval in macromolecular crystallography. 49:60
—, *See* Arnott, Chandrasekaran, Millane, and Park.
Möhwald, H. *See* Riegler and Möhwald.
Moore, P. B., Capel, M., Kjeldgaard, M., and Engelman, D. M. Quaternary organization of the 30S ribosomal subunit of *Escherichia coli*. 49:13
Morando, M. *See* Takashima, Casaleggio, Giuliano, Morando, Arrigo, and Ridella.
Morrison, R. *See* McPherson, Brayer, and Morrison.
Muglia, L. J. *See* Williams, Athey, Muglia, Schappe, Gough, and Langmore.
Mushayakarara, E., Wong, P. T. T., and Mantsch, H. H. Pressure locking of the subgel phase of hydrated dipalmitoyl phosphatidylcholine bilayers. A Raman spectroscopic study. 49:1199

N

Naik, V. M., and Krimm, S. Vibrational analysis of the structure of gramicidin A. I. Normal mode analysis. 49:1131
—, Vibrational analysis of the structure of gramicidin A. II. Vibrational spectra. 49:1147
Nakanishi, K. *See* Spudich, McCain, Nakanishi, Okabe, Shimizu, Rodman, Honig, and Bogomolni.
Namba, K. *See* Stubbs, Namba, and Makowski.
Navetta, F. I. *See* Barrett-Russell, Weiss, Navetta, Koeppe, and Andersen.
Noji, S. *See* Takahashi, Noji, Erbe, Steere, and Kon.
Northrup, S. H. *See* Allison, Northrup, and McCammon.
Norton, W. A. *See* Millane, Bates, Fright, and Norton.
Novotny, J. *See* Bruccoleri, Novotny, Keck, and Cohen.

O

Oesterhelt, D. *See* Polland, Franz, Zinth, Kaiser, Kolling, and Oesterhelt.
Offner, F. F. Comments on "Some unexpected consequences of a simple physical mechanism for voltage-dependent gating in biological membranes." 49:1109
Ojcius, D. M. *See* Tsui, Ojcius, and Hubbell.
Okabe, M. *See* Spudich, McCain, Nakanishi, Okabe, Shimizu, Rodman, Honig, and Bogomolni.
O'Leary, T. J., Ross, P. D., Lieber, M. R., and Levin, I. W. Effects of cyclosporine A on biomembranes. Vibrational spectroscopic, calorimetric, and hemolysis studies. 49:795
Oliveira, C. G. *See* Verjovski-Almeida, Carvalho-Alves, Oliveira, and Ferreira.
Olson, A. J. *See* Getzoff, Tainer, and Olson.
Olson, H. M. *See* Glitz, Olson, and Lasater.
O'Neil, J. D. J. *See* Henry, O'Neil, Weiner, and Sykes.
Opella, S. J. *See* Valentine, Schneider, Leo, Colnago, and Opella.
Oritz, M. *See* Patlak, Oritz, and Horn.
Otsuka, J. *See* Suzuki, Kunisawa, and Otsuka.

P

Papp, E., Fricsovszky, G., and Meszéna, G. Electrodichroism of purple membrane. Ionic strength dependence. 49:1089
Papp, S., Kracke, G., Joshi, N., and Martonosi, A. The reaction of *N*-(1-pyrene) maleimide with sarcoplasmic reticulum. 49:411
Pardee, J. D. *See* Saad, Fischman, and Pardee.
Park, H.-S. *See* Arnott, Chandrasekaran, Millane, and Park.
Pascolini, D. *See* Blasie, Pascolini, Herbette, Pierce, Itshak, Skita, and Scarpa.
Patlak, J. B., Oritz, M., and Horn, R. Opentime heterogeneity during bursting of sodium channels in frog skeletal muscle. 49:773
Peachey, L. D. *See* Sundell, Goldman, and Peachey.
Peemoeller, H., Yeomans, F. G., Kydon, D. W., and Sharp, A. R. Water molecule dynamics in hydrated lysozyme. A deuteron magnetic resonance study. 49:943
Petersen, N. O., Johnson, D. C., and Schlesinger, M. J. Scanning fluorescence correlation spectroscopy. II. Application to virus glycoprotein aggregation. 49:817
Petersen, N. O. Scanning fluorescence correlation spectroscopy. I. Theory and simulation of aggregation measurements. 49:809
Petersen, W. P. *See* Eisinger, Flores, and Petersen.
Petrin, M. *See* Ghosh, Petrin, and Maki.
Phillips, G. N., Jr. *See* Boylan and Phillips.
Pierce, D. *See* Blasie, Pascolini, Herbette, Pierce, Itshak, Skita, and Scarpa.
Polland, H.-J., Franz, M. A., Zinth, W., Kaiser, W., Kolling, E., and Oesterhelt, D. Early picosecond events in the photocycle of bacteriorhodopsin. 49:651
Pollard, T. D. Mechanism of actin filament self-assembly and regulation of the process by actin-binding proteins. 49:149
Polnaszek, C. F. *See* Barnett, Fajer, Polnaszek, and Thomas.
Porter, K. R. *See* Gershon, Porter, and McNiven.
Potschka, M. The structure of intermediate filaments. 49:129
Pratt, E. A. *See* Ho, Rule, and Pratt.
Pringle, A. T., and Bramhall, J. S. Bilayer penetration of membrane-associated proteins. 49:102

R

Radermacher, M. *See* Frank, Verschoor, Wegenknecht, Rosenthal, Radermacher, and Boublik.
Rando, T. A., and Strichartz, G. R. Saxitoxin blocks batrachotoxin-modified sodium channels in the node of Ranvier in a voltage-dependent manner. 49:785
Reddy, K. V. S., and Hendler, R. W. Complete analysis of the cytochrome components of beef heart mitochondria in terms of spectra and redox properties. The c_1-cytochromes. 49:693
—, and Bunow, B. Complete analysis of the cytochrome components of beef heart mitochondria in terms of spectra and redox properties. Cytochromes aa_3. 49:705
—, *See* Hendler, Reddy, Shrager, and Caughey.
Reedy, M. C. *See* Taylor, Reedy, Cordova, and Reedy.
Reedy, M. K. *See* Taylor, Reedy, Cordova, and Reedy.

Reisler, E., Cheung, P., and Borochnov, N. Macromolecular assemblies of myosin. 49:335
Rhodes, D. G. *See* Herbette, Chester, and Rhodes.
Ribeiro, A. *See* Mannella, Ribeiro, and Frank.
Ridella, S. *See* Takashima, Casaleggio, Giuliano, Morando, Arrigo, and Ridella.
Riegler, J., and Möhwald, H. Elastic interactions of photosynthetic reaction center proteins affecting phase transitions and protein distributions. 49:1111
Roberts, M. M. *See* Burnett, van Oostrum, and Roberts.
Rodman, H. *See* Spudich, McCain, Nakanishi, Okabe, Shimizu, Rodman, Honig, and Bogomolni.
Roos, K. P. Three-dimensional reconstructions of optically imaged single heart cell striation patterns. 49:44
Rose, G. D., and Lee, R. H. Molecular recognition in macromolecules. 49:83
Rosen, L. S. *See* Magdoff-Fairchild and Rosen.
Rosenthal, M. *See* Frank, Verschoor, Wegenknecht, Rosenthal, Radermacher, and Boublik.
Ross, P. D. *See* O'Leary, Ross, Lieber, and Levin.
Royer, W. E., Jr. *See* Hendrickson and Royer.
Ruben, G. C. *See* Marx and Ruben.
Ruiz-Robles, I. *See* Wickstrom, Simonet, Medlock, and Ruiz-Robles.
Rule, G. S. *See* Ho, Rule, and Pratt.
Rutherford, A. W., and Acker, S. Orientation of the primary donor in isolated photosystem II reaction centers studied by electron paramagnetic resonance. 49:101
Rzepecki, L. M., Strittmatter, P., and Herbette, L. G. X-ray diffraction analysis of cytochrome b_5 reconstituted in egg phosphatidylcholine vesicles. 49:829

S

Saad, A. D., Fischman, D. A., and Pardee, J. D. Fluorescence energy transfer studies of myosin thick filament assembly. 49:140
Salemme, F. R. *See* Finzel and Salemme.
Sauer, R. T. *See* Weiss, Stearman, Jeitler-Nilsson, Karplus, and Sauer.
Sayre, D. *See* Beese, Feder, and Sayre.
Scarpa, A. *See* Blasie, Pascolini, Herbette, Pierce, Itshak, Skita, and Scarpa.
Schappe, R. S. *See* Williams, Athey, Muglia, Schappe, Gough, and Langmore.
Schlesinger, M. J. *See* Petersen, Johnson, and Schlesinger.
Schmid, M. F. *See* Grant, Schmid, Chiu, Deatherage, and Hosoda.
Schneider, D. M. *See* Valentine, Schneider, Leo, Colnago, and Opella.
Schweitzer-Stenner, R., Wedekind, D., and Dreybrodt, W. Correspondence of the *pK* values of oxy-hb titration states detected by resonance Raman scattering to kinetic data of ligand dissociation and association. 49:1077
—, *See* Brunzel, Dreybrodt, and Schweitzer-Stenner.
Seger, D. *See* Greulich, Ausio, Seger, Wachtel, and Eisenberg.
Seidel, J. C. *See* Ishiwata, Manuck, Seidel, and Gergely.
Serwer, P. *See* Greiss, Serwer, and Horowitz.
Sharnoff, M., Brehm, L. P., and Henry, R. W. Dynamic structures through microdifferential holography. 49:281
Sharp, A. R. *See* Peemoeller, Yeomans, Kydon, and Sharp.
Sharp, K. *See* McDaniel, Sharp, Brooks, McLaughlin, Winiski, Cafiso, and McLaughlin.
Shimizu, N. *See* Spudich, McCain, Nakanishi, Okabe, Shimizu, Rodman, Honig, and Bogomolni.
Shrager, R. I., and Hendler, R. W. Processing and analysis of potentiometric data. 49:687
—, *See* Hendler, Reddy, Shrager, and Caughey.
Sideman, S. *See* Beyar and Sideman.
Siegel, D. P. Inverted micellar intermediates and the transitions between lamellar, cubic, and inverted hexagonal lipid phases. I. Mechanism of the $L_\alpha \rightleftharpoons H_{II}$ phase transitions. 49:1155
—, Inverted micellar intermediates and the transitions between lamellar, cubic, and inverted hexagonal lipid phases. II. Implications for membrane-membrane interactions and membrane fusion. 49:1171
Sigworth, F. J. Open channel noise. II. A test for coupling between current fluctuations and conformational transitions in the acetylcholine receptor. 49:1041
Simonet, W. S. *See* Wickstrom, Simonet, Medlock, and Ruiz-Robles.
Skita, V. *See* Blasie, Pascolini, Herbette, Pierce, Itshak, Skita, and Scarpa.
Slayter, H. *See* Loscalzo, Slayter, Handin, and Farber.
Smith, F. R. *See* Ackers and Smith.
Smith, R., and Cornell, B. A. The dynamics of the intrinsic membrane polypeptide gramicidin A in phospholipid bilayers: a solid state carbon-13 NMR study. 49:117
Smith-Maxwell, C. *See* Danko, Smith-Maxwell, McKinney, and Begenisich.
Song, P.-S., Tamai, N., and Yamazaki, I. Viscosity dependence of primary photoprocesses of 124 kilodalton phytochrome. 49:645
Spudich, J. L., McCain, D. A., Nakanishi, K., Okabe, M., Shimizu, N., Rodman, H., Honig, B., and Bogomolni, R. A. Chromophore/protein interaction in bacterial sensory rhodopsin and bacteriorhodopsin. 49:479
Squier, T. C., and Thomas, D. D. Applications of new saturation transfer electron paramagnetic resonance methodology to the rotational dynamics of the Ca-ATPase in sarcoplasmic reticulum membranes. 49:937
—, Methodology for increased precision in saturation transfer electron paramagnetic resonance studies of rotational dynamics. 49:921
Starkus, J. G. *See* Heggeness and Starkus.
Starmer, C. F., Yeh, J. Z., and Tanguy, J. A quantitative description of QX222 blockade of sodium channels in squid axons. 49:913
Stasiak, A., and Egelman, E. Structure and dynamics of recA protein—DNA complexes as determined by image analysis of electron micrographs. 49:5
Stearman, R. *See* Weiss, Stearman, Jeitler-Nilsson, Karplus, and Sauer.
Steer, C. J. *See* Levin, Vincent, Blumenthal, and Steer.
Steere, R. L. *See* Takahashi, Noji, Erbe, Steere, and Kon.
Stephenson, F. A. *See* Huang, Mason, Stephenson, and Levin.
Stetzkowski-Marden, F. *See* Marden, Hui Bon Hoa, and Stetzkowski-Marden.
Stewart, M. *See* Kensler and Stewart.
Stokke, B. T., Mikkelsen, A., and Elgsaeter, A. Spectrin, human erythrocyte shapes and mechanochemical properties. 49:319
Strichartz, G. R. *See* Rando and Strichartz.
Strittmatter, P. *See* Rzepecki, Strittmatter, and Herbette.
Stubbs, G., Namba, K., and Makowski, L. Application of restrained least-squares refinement to fiber diffraction from macromolecular assemblies. 49:58
Sundell, C. L., Goldman, Y. E., and Peachey, L. D. Fine structure in near-field and far-field laser diffraction patterns from skeletal muscle fibers. 49:521
Suzuki, H., Kunisawa, T., and Otsuka, J. Theoretical evaluation of transcriptional pausing effect on the attenuation in *trp* leader sequence. 49:425
Sykes, B. D. *See* Henry, O'Neil, Weiner, and Sykes.
Szent-Györgyi, A. G. *See* Vibert, Szentkiralyi, Hardwicke, Szent-Györgyi, and Cohen.

Szentkiralyi, E. *See* Vibert, Szentkiralyi, Hardwicke, Szent-Györgyi, and Cohen.

T

Tainer, J. A. *See* Getzoff, Tainer, and Olson.
Takahashi, T., Noji, S., Erbe, E. F., Steere, R. L., and Kon, H. Coldshock hemolysis in human erythrocytes studied by spin probe method and freeze-fracture electron microscopy. 49:403
Takashima, S., Casaleggio, A., Giuliano, F., Morando, M., Arrigo, P., and Ridella, S. Study of bound water of poly-adenine using high frequency dielectric measurements. 49:1003
Tamai, N. *See* Song, Tamai, and Yamazaki.
Tanguy, J. *See* Starmer, Yeh, and Tanguy.
Tao, T., Gergely, J., and Leavis, P. Studies on the interactions between the subunits of skeletal muscle troponin using fluorescence quenching, photochemical cross-linking, and excitation energy transfer techniques. 49:142
Taylor, K. A., Reedy, M. C., Cordova, L., and Reedy, M. K. Image reconstruction using electron micrographs of insect flight muscle: use of thick transverse sections to supplement data from tilted thin longitudinal sections. 49:353
Taylor, S. *See* Cecchi, Griffiths, and Taylor.
Thomas, D. D. *See* Barnett, Fajer, Polnaszek, and Thomas.
—, *See* Squier and Thomas.
—, *See* Squier and Thomas.
Timmins, P. A. *See* Berthet-Colominas, Boulanger, Devaux, Jacrot, and Timmins.
—, *See* Zulauf, Timmins, and Garavito.
Torney, D. C., Dembo, M., and Bell, G. I. Thermodynamics of cell adhesion II. Freely mobile repellers. 49:501
Trudelle, Y. *See* Durkin, Andersen, Blout, Heitz, Koeppe, and Trudelle.
Tsui, F. C., Ojcius, D. M., and Hubbell, W. L. The intrinsic pK_a values for phosphatidylserine and phosphatidylcholine host bilayers. 49:459
Tyrrell, R. M. *See* Miguel and Tyrrell.

V

Valentine, K. G., Schneider, D. M., Leo, G. C., Colnago, L. A., and Opella, S. J. Structure and dynamics of fd coat protein. 49:36
van Oostrum, J. *See* Burnett, van Oostrum, and Roberts.X
Verjovski-Almeida, S., Carvalho-Alves, P. C., Oliveira, C. G., and Ferreira, S. T. Probing the nucleotide binding sites of sarcoplasmic reticulum ATPase by photoaffinity labeling. 49:108
Verschoor, A. *See* Frank, Verschoor, Wegenknecht, Rosenthal, Radermacher, and Boublik.
Vibert, P., Szentkiralyi, E., Hardwicke, P., Szent-Györgyi, A. G., and Cohen, C. Structural models for the regulatory switch of myosin. 49:131
Vincent, J. S. *See* Levin, Vincent, Blumenthal, and Steer.
Virudachalam, R., and Markley, J. L. Nuclear magnetic resonance studies of spherical plant viruses. 49:33
Voigt, A. *See* Donath and Voigt.

W

Wachtel, E. *See* Greulich, Ausio, Seger, Wachtel, and Eisenberg.
Wajnberg, E., Kalinowski, H. J., Bemski, G., and Helman, J. S. Spin relaxation of iron in mixed state hemoproteins. 49:1195
Wall, J. S. *See* Yang, Frey, Hainfeld, and Wall.
Wall, J. *See* Wooley, Chung, Wall, and LeStourgeon.
Wallace, B. A. The structure of gramicidin A. 49:295
Wang, P. C., and Chen, S.-H. Quasi-elastic light scattering from migrating chemotactic bands of *Escherichia coli*. III. Studies of band formation propagation and motility in oxygen and serine substrates. 49:1205
Ware, B. R., and Klein, J. W. Assembly of actin filaments studied by laser light scattering and fluorescence photobleaching recovery. 49:147
Webb, W. W. *See* Gross and Webb.
Weber, G. *See* King and Weber.
Wedekind, D. *See* Schweitzer-Stenner, Wedekind, and Dreybrodt.
Wegenknecht, T. *See* Frank, Verschoor, Wegenknecht, Rosenthal, Radermacher, and Boublik.
Weiner, J. H. *See* Henry, O'Neil, Weiner, and Sykes.
Weiss, L. B. *See* Barrett-Russell, Weiss, Navetta, Koeppe, and Andersen.
Weiss, M. A., Stearman, R., Jeitler-Nilsson, A., Karplus, M., and Sauer, R. T. Protein-protein interaction in DNA recognition: ^{1}H-NMR studies of lambda cI repressors genetically altered by site-directed mutagenesis. 49:29
White, S. H. *See* King and White.
Wickman, H. H. *See* Church, Griffiths, Lewis, McElhaney, and Wickman.
Wickstrom, E., Simonet, W. S., Medlock, K., and Ruiz-Robles, I. Complementary oligonucleotide probe of vesicular stomatitus virus matrix protein mRNA translation. 49:15
Williams, J. B., and Kutchai, H. Use of a membrane-bound fluorophore to characterize diffusion boundary layers around human erythrocytes. 49:453
Williams, S. P., Athey, B. D., Muglia, L. J., Schappe, R. S., Gough, A. H., and Langmore, J. P. Chromatin fibers are left-handed double helices with diameter and mass per unit length that depend on linker length. 49:233
Winiski, A. P. *See* McDaniel, Sharp, Brooks, McLaughlin, Winiski, Cafiso, and McLaughlin.
Wittmershaus, B. P. *See* Gülen, Wittmershaus, and Knox.
Wong, P. T. T. *See* Mushayakarara, Wong, and Mantsch.
Wooley, J., Chung, S.-Y., Wall, J., and LeStourgeon, W. Architecture of pre-messenger, nuclear ribonucleoprotein monoparticles. 49:17
Worthington, C. R. The diffuse scattering problem in membrane diffraction: a solution. 49:98

X

Xu, Z.-C., and Cafiso, D. S. Phospholipid packing and conformation in small vesicles revealed by two-dimensional ^{1}H-nuclear magnetic resonance cross-relaxation spectroscopy. 49:779

Y

Yamaguchi, K. *See* Kasai, Kameyama, Yamaguchi, and Fukuda.
Yamazaki, I. *See* Song, Tamai, and Yamazaki.
Yang, H., Frey, P. A., Hainfeld, J. F., and Wall, J. S. Pyruvate dehydrogenase complex of *Escherichia coli*. Radial mass analysis of subcomplexes by scanning transmission electron microscopy. 49:56
Yeh, J. Z. *See* Starmer, Yeh, and Tanguy.
Yeh, Y. *See* Baskin, Burton, Chen, and Yeh.
Yeomans, F. G. *See* Peemoeller, Yeomans, Kydon, and Sharp.
Yu, L. C., and Brenner, B. High resolution equatorial x-ray diffraction from single skinned rabbit psoas fibers. 49:133

Z

Zasadzinski, J. A. N. Transmission electron microscopy observations of sonication-induced changes in liposome structure. 49:1119

Zinth, W. *See* Polland, Franz, Zinth, Kaiser, Kolling, and Oesterhelt.

Zukin, R. S., Klos, M. F., and Hirsch, R. E. Conformational dynamics of two histidine-binding proteins of *Salmonella typhimurium*. 49:1229

Zulauf, M., Timmins, P. A., and Garavito, R. M. Neutron crystallography of a membrane protein: localization of detergent and protein at 20Å resolution. 49:96